Therefore, light of the melatonin production inhibition wavelength range is emitted to suppress production of melatonin in the daytime and light of the melatonin production inhibition wavelength range is deliberately blocked in the nighttime to thereby activate biorhythms.

An encapsulation member may be included to protect the organic light emitting diode **70**. The encapsulation member may be formed on the common electrode **270**, and may be sealed to substrate **110** by a sealant. The encapsulation member may be made, for example, of glass, quartz, ceramic, plastic, metal, or another material. An encapsulation thin film layer may be formed, for example, by depositing an inorganic layer and an organic layer on the common electrode **270** rather than using the sealant.

In accordance with one or more of the aforementioned embodiments, an OLED display is provided to include one or more melatonin control pixels that emit or block light of a melatonin production inhibition wavelength range. The melatonin control pixels may emit light of a melatonin production inhibition wavelength range in the daytime and block light of the melatonin production inhibition wavelength range in the nighttime. As a result, production of melatonin of a viewer mat be blocked in the daytime and may be boosted in the nighttime for control of biorhythms.

In the aforementioned embodiments, the OLED display device is described to have certain structures. However, the OLED display device may have different structures in other embodiments. For example, each pixel of the OLED display may be provided with a plurality of thin film transistors and one or more capacitors. Also, additional wires may be including and/or one or more of the wires that are shown may be omitted or replaced with a different arrangement. Also, in one embodiment, a pixel may be understood to correspond to a minimum unit for displaying light to be included in an image, e.g., a sub-pixel. In other embodiments, a pixel may be understood to be a pixel or a unit different from a minimum unit for displaying light to be included in an image. It is also understood that the display device displays an image based on light emitted from a plurality of pixels.

Example embodiments have been disclosed herein, and although specific terms are employed, they are used and are to be interpreted in a generic and descriptive sense only and not for purpose of limitation. In some instances, as would be apparent to one of ordinary skill in the art as of the filing of the present application, features, characteristics, and/or elements described in connection with a particular embodiment may be used singly or in combination with features, characteristics, and/or elements described in connection with other embodiments unless otherwise specifically indicated. Accordingly, it will be understood by those of skill in the art that various changes in form and details may be made without departing from the spirit and scope of the present invention as set forth in the following claims.

What is claimed is:

1. An organic light emitting diode (OLED) display device, comprising:

a substrate; and

three color pixels and a melatonin control pixel on the substrate,

wherein the melatonin control pixel is to emit or block light in a melatonin production inhibition wavelength range, and wherein a thickness of an organic emission layer of the melatonin control pixel is different from a thickness of an organic emission layer of one or more of the three color pixels.

2. The display device as claimed in claim **1**, wherein the melatonin production inhibition wavelength range includes about 414 nm to about 514 nm.

3. The display device as claimed in claim **2**, wherein light emitted from the melatonin control pixel has a peak in the melatonin production inhibition wavelength range, and has a full width at half maximum of greater than 1 nm and less than 50 nm.

4. The display device as claimed in claim **1**, wherein each of the three color pixels and the melatonin control pixel includes:

thin film transistors on the substrate;

a first electrode connected to the thin film transistors;

an organic emission layer on the first electrode; and

a second electrode on the organic emission layer.

5. The display device as claimed in claim **1**, wherein the organic emission layer of the melatonin control pixel is to emit the light in the melatonin production inhibition wavelength range.

6. The display device as claimed in claim **1**, wherein the three color pixels are a red pixel, a green pixel, and a blue pixel.

7. A display device, comprising:

a signal line; and

a first pixel connected to the signal line and having an organic emission layer with a thickness different from a thickness of an organic emission layer of another pixel, wherein the first pixel is to emit light in a predetermined range during a first time period and is not to emit light in the predetermined range during a second time period during which an image is displayed, wherein the second time period does not overlap the first time period, and wherein the predetermined range is a melatonin production inhibition wavelength range.

8. The display device as claimed in claim **7**, wherein:

the first pixel is to receive a control signal from the signal line, and

the display device includes a second pixel to emit or not to emit light in the predetermined range based on the control signal.

9. The display device as claimed in claim **7**, wherein:

the first time period is daytime, and

the second time period is nighttime.

10. The display device as claimed claim **7**, further comprising:

a plurality of second pixels to emit different colors of light during the first and second time periods.

11. The display device as claimed in claim **10**, wherein the light emitted from the first pixel has a peak in the melatonin production inhibition wavelength range, and has a full width at half maximum of greater than 1 nm and less than 50 nm.

12. The display device as claimed in claim **10**, wherein a sum of light from the first pixel and light from at least one of the second pixels combine to increase inhibition of production of melatonin during the first time period.

13. The display device as claimed in claim **10**, wherein at least one of the second pixels is a blue pixel.

14. A display device, comprising:

a first pixel to emit light; and

a second pixel to emit light in a predetermined range in a first time period and to not emit light in the predetermined range in a second time period during which the first pixel emits light, wherein the first pixel includes a first organic emission layer having a first thickness and the second pixel includes a second organic emission layer having a second thickness different from the first thickness, and wherein a resonance pattern is formed in